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TITLE : SIMPLIFIED CHLORINE DIOXIDE GENERATOR

ABSTRACT : PROBLEM TO BE SOLVED: To simply and effectively obtain chlorine dioxide aqueous solution of high purity and having concentration for sterilization and disinfection by carrying out the reaction of low concentration aqueous solution of salt of chlorous acid, aqueous solution of salt of hypochlorous acid and aqueous solution of an acid simultaneously mixing in same volume, previously prepared to have same volume and stoichiometrically equivalent.

SOLUTION: The concentration of each solution is set as follows; the concentration of salt of chlorous acid in aqueous solution $\leq 10\text{wt.}\%$, the concentration of salt of hypochlorous acid in aqueous solution $\leq 5\text{wt.}\%$ and the concentration of an acid in aqueous solution $\leq 5\text{wt.}\%$. The amount of salt of hypochlorous acid is in the range of 1.0 to 1.02 times of stoichiometrically equal in quantity of salt of chlorous acid, the amount of acid is in the range of 1.0 to 1.15 times of stoichiometrically equal in quantity of salt of chlorous acid. The three aqueous solutions are mixed simultaneously in same volume, reacted and affords high purity chlorine dioxide solution containing chlorine $\leq 2\%$ based on chlorine dioxide as impurities. As the feeding device of the raw material aqueous solution, a pump capable of feeding same volume in a same time, is used and a static mixer is used as the reactor.

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